

The Bacteriology of Tuberculosis.

FROM THE PARKERSBURG SENTINEL.

The following is an extract from a paper which was read by Dr. L. O. Rose the bacteriologist, before an interested audience at the tuberculosis exhibit on Saturday evening on the subject of "The Bacteriology of Tuberculosis."

No doubt you believe in "The Germ Theory" and that tuberculosis is due to one of the several species. You have had the germ demonstrated to you under the microscope, you have been shown diseased organs of both man and beast produced by the little weed called tubercle bacilli, you have been told how many millions may be found in a small particle of sputum from a consumptive patient, yet you have no positive proof that these statements are true. This fact must be proven to the public and accepted as a fact before the contagious and infectious diseases can be stamped out. "Seeing is believing." At the conclusion of this talk I shall prepare a slide from some sputum of a patient dead of Tuberculosis and allow you to view under the microscope these death dealing little plants. This unfortunate mother was taken away in the prime of life leaving a babe five months of age. You have statistics before you which prove that this mother was only one among thousands that die yearly of Tuberculosis.

It is interesting to know that these minute microscopical bodies called bacteria, are found everywhere. They surround us by the billion, friendly, unfriendly and indifferent, yet no human being has viewed a single one of these germs except in captivity. If it were possible to see these deadly germs with unaided eyes we could attempt to protect our selves from their attack as we would against ferocious beasts and poisonous reptiles.

Bacteria in general, are found in the air around and above us, deep in the soil beneath our feet, in our food and drink, in and on our bodies. Bacteria are also found in the lakes and rivers, in the tropical seas as well as the ice of the polar region.

The relation of bacteria as a causative factor of disease will no doubt remain as the most important aspect of this growing science. Yet from a practical point of view we should remember that there exists more friendly bacteria than by unfriendly, and that they exert a wonderful influence for our welfare. These bacteria attack, disintegrate and destroy dead bodies, attack and kill unfriendly living organism. Without bacteria we would be unable to make butter, cheese, bread and many other necessities as well as luxuries. They assist in the arts and industries, as the tanning of leather, curing of tobacco and vinegar making. Other bacteria are highly constructive being able to convert important chemical elements like carbon and nitrogen from unfavorable combination into favorable ones, which can be utilized by higher forms of plant life. It has been discovered for example that certain forms of bacteria have the properties of tapping the nitrogen of the air through the structure of certain plants, and thus fertilize the soil by the deposition of this element in it. Vast tracts of barren lands have been made fertile and productive by this friendly germ. The cake of yeast you buy is a pure culture of these friendly germs. You take them home mix them dough, grow them on the back of the stove or in some warm place until they form gas enough to cause the bread to rise, then you very carefully place it in the stove and bake the bread, in so doing you drive the gas off and kill the germs and eat their dead bodies left in the bread.

Practically all of our knowledge relating to bacteria, as to the part which they play as a causative factor of disease has learned during the last half century, nevertheless possibly the first human being in-

many facts were known years ago, even to the ancient, records of which have been fruitful studies and investigations. The epidemic nature of certain maladies was naturally among the first to attract attention.

What are Bacteria? At the bottom of the scale of living things there is a group of organisms, which are usually called Bacteria. The term bacteria, strictly speaking only refers to the rod shaped variety of the group, while the name of the Science Bacteriology, was derived from them, yet it refers to the whole group, however, we reserve the term "bacillus" for the rod shaped variety only. Other terms used are germ, microbe and micro-organisms.

Bacteria are minute single celled plants, which have no chlorophyll, and they multiply only by division (fission.) With our present knowledge bacteria, yeast cells and other like organisms, may unhesitatingly be classed in the vegetable kingdom among the lower order of flowerless plant (Thallophytae and fungi) and probably belong to the fungi. Yeast cells, mushrooms, puffballs and other fungi flourish in dark and moist places. The rapidity in which the mushroom develops, some growing to maturity in a single night, will enable one to appreciate more fully the rapidity of the growth of those minute fungi called bacteria.

The extreme smallness of Bacteria prevents us from comprehending or comparing their size. Twenty-five thousand young typhoid fever germs placed end to end will make a line an inch in length, yet this large number would still be invisible to the unaided eye. When one touches a growth of bacteria with a small platinum wire and spread the tiny portion upon a slip of glass it is found upon examination with the microscope that the bacteria left on the glass may be compared to the stars in the sky, and sand on the shore, or any other standard for numbers beyond conception.

Bacteria live chiefly on organic matter. They are called saprophytes (refuse eaters) when their substance is derived from dead organic substances; parasites when they live on or in some living organism. The saprophytes (refuse eaters,) which constitute the greater number of bacteria are not only harmless to living organisms, but are necessary to life, as they perform many important functions in the economy of nature including the process of fermentation and putrefaction. The parasites on the contrary are usually harmful invaders, giving rise through the products of their growth in the body tissues to the so called infectious diseases, an example of which is the germ of tuberculosis.

The time required for the reproduction of a bacterial cell is about 20 to 30 minutes. A remarkable thing about bacterial division is the rapidity in which a cell attains maturity. It has been estimated that if bacterial multiplication went on unchecked and the division of each cell took place as often as once an hour, the descendants of each individual would in two days number 281,500,000,000 and that in three days the progeny of a single cell would balance 148,356 hundred weight or more than 74 tons.

Twenty-seven years ago Robert Koch made himself immortal by his discovery of the tubercle bacillus, the specific cause of tuberculosis. "The Great White Plague." The question is often asked, where did the consumption germ originate? It is but reasonable to suppose that they were created in the beginning with the numerous plants of the vegetable kingdom, to which class they belong however they are of the lowest type of flowerless plants if not the most treacherous.

When and how the germ first attacked man? We have record which indicate that man was heir to this disease many centuries ago, but half century, nevertheless possibly the first human being in-

fecting with the germ of tuberculosis resisted its growth, but after passing from one to another its virulence no doubt was increased until finally we have today a most deadly disease producing germ, which attacks and feeds on the human being in preference to all other animal or vegetable life. This is not an unreasonable deduction since the true tubercle bacilli have never been found growing except in animal tissue.

How many the germ of consumption enter the system?

1. By being inhaled or breathed into the lungs.

2. By being ingested with food or drink.

3. By inoculation, the germ entering through a cut in the skin.

Practically every organ and tissue of the human body are attacked the germ of tuberculosis, however the lung tissue is the most favorable and usual seat of the infection. The lesion produced by these germs are little lumps or nodules characterized as tubercles, from which the disease derives its name, tuberculosis. No doubt you have become quite familiar with these little nodules or tubercles since visiting this exhibit.

Democrats Not Divided.

Last Friday, July 23, in the U. S. Senate, Senator Culberson took advantage of the opportunity to present a brief statement showing the record of the Democratic party in the Senate on the Payne-Aldrich tariff bill. He asked for the printing of a series of tables showing the votes of the Democratic members on all the more important questions before the Senate in connection with the tariff, and in doing so made a brief explanation.

"An impression seems to have been created in some quarters that in their action on the tariff bill, which is now in conference, the Democrats of the Senate have been commonly and seriously divided among themselves, and have often voted with the protectionist majority," said the Texas Senator, in beginning his statement. He then presented the record to show this impression to be unfounded. He said that his statement had been taken from the Congressional Record, and showed the votes on the more important amendments and on the final passage of the bill.

Continuing his explanation, Mr. Culberson said: "With the exception of the vote on iron ore, coal and lumber and hides, the Democratic vote was practically a unit when coupled with the proposition that leather, boots and shoes should also be placed on the free list. On the income tax amendment to the bill the Democratic vote was unanimous, and on oil, tea and coffee, print paper and wood pulp it was substantially so. Still more significant and important, on all subjects of the bill which particularly and more directly affect the consuming masses and the cost of living, such as crockery, cutlery, glassware, sugar, household goods generally, agricultural implements, blankets, flannels and hats, leather boots and shoes, iron and steel and their products, including cotton ties, cotton manufactures, wool and manufacturers of wool—in fact, on all articles affected by the tariff which enter into the daily needs of the people, the Democratic vote was in effect unanimous and was for much lower duties than those which were adopted."

"It was upon Democratic initiative, moreover, that sulphate of ammonia, Paris green and London purple, oleostearin, and cotton bagging were placed on the free list in the Senate bill; which are the principal benefits to farmers and fruit growers in the bill; and it was also due to Democratic initiative that the tax on tea and coffee was stricken from the maximum provision of the Senate measure."

W. P. Myers, of Durbin, underwent an operation at the Hinton Hospital for appendicitis and is expected to make the usual recovery.—Daily News.

Preaching the Gospel of Good Roads.

The good roads movement which has taken hold of the country will be very far reaching in its effect. We are entering upon a period in which there is to be a revolution mightily affecting social conditions and educational and religious advancement, a period in which the loneliness of farm life is to be banished by the closer intercommunication between the people of the agricultural districts with each other and with adjacent towns and cities. Bad roads have meant more than simply an enormous loss, a wastage of time and effort in getting the product of the farm to market and the merchandise which the farmer buys from the depot back to the country place. The aggregate cost of bad roads runs into the hundreds of millions of dollars annually, and the farmers and the people away from the centers of population are the ones who have to pay the cost.

The automobile, the use of which is helping to stimulate an interest in good roads, is only an expression or exponent of new conditions upon which all civilization has entered. We have come upon a time when the gas or internal combustion engine has started a revolution equally as important and equally as far-reaching in its effect, as that of the locomotive, which for the last three quarters of a century has been the greatest material power in human advancement. The internal combustion engine makes possible the lessening of work on the farm. It makes possible the pumping of water for use in country homes and for stock. It makes possible many things around a farm and in connection with farm life heretofore impossible except by hard manual labor. It makes possible the motor boat, which is found on every river of the land. The development of this great engine for human progress will necessitate a very broad and rapid building of good roads, for the automobile in its present uses for pleasure is but the forerunner of the auto-truck, which soon will be found in use throughout the country, wherever good roads and good streets make feasible the hauling in this way rather than by the slow and costly wagon of the present.

When one begins seriously to contemplate the changes which are being brought on us by the development of the internal combustion engine, the benefit of the motor boat and the motor car, the small farm engine, the facilities of travel which these things and good roads will bring about, the imagination is apt to almost stagger us with the limitless possibilities of advancement of the period upon which we have entered. The man who is working for the building of good roads is directly working for the betterment of mankind. He is working for the advancement of education and religion and all that makes for the higher civilization. Of what use are churches and schools in country districts if for five or six months of the year country roads are so impassable that they cannot be attended? Of what value to the grower are the products of farms which can only reach the market at a cost of transportation by wagon which eliminates all profit? The charm of country, the beauty of nature are pictured as reasons why farm life should appeal to the people, but when farm life means drudgery and separation from friends by reason of bad roads, it is not to be wondered at that the people of the agricultural districts, young and old, crowd the cities in order to get a place where modern conveniences and modern comforts to daily travel are available. The construction of good roads will change this. It will add a thousandfold to the charm of country life. It will increase the prosperity of the farmers. It will be the most powerful factor in stemming the movement of population toward the city and making the country boy and girl happy at home. The gospel of good roads

ought to be preached with the zeal of the missionary, and the farmer, the merchant, the manufacturer and the banker, and above all else, the women of the country districts ought to be incessant workers for the building of good roads. Let us not leave unto future generations that which we should do to-day.

The South, which has lingered so far in the rear in this work, should take it up with greater energy than any other section, and in this way overcome the deficiencies of the past and take the lead in the construction of good roads. It should be borne in mind that good roads are not a luxury only but a necessity, and that the cost of their building is not extravagance, but simply a wise investment. It may probably be stated without contradiction that the cost of the building of any good road anywhere in this country will bring about an increase in the value of adjacent property, and this increased value will be based on increased earning possibilities, greater than the total cost of the construction of the road. In view of this fact, no town, no community, is too poor to build good streets and good roads, for spending money for such a purpose, if wisely spent, is the making of an investment that immediately is repaid to the community by the enhancement in value of property, and this enhancement continues on perpetually. Let the good work go on.—Manufacturers' Record.

Agricultural Statistics.

From the Assessor's report to the State Board of Agriculture we have the following statistics of the agricultural resources of the county:

Wheat, 1042 acres, 11,583 bu.
Oats 2186 acres 17,504 bu.
Corn, 3366 acres 107,761 bu.
Buckwheat, 935 acres 7637 bu.
Potatoes, 307 acres, 32,716 bu.
Timothy, 14,748, 14,402 tons.
Clover 565 acres 700 tons.
Poultry, number 38,461, value \$11,728.
Eggs, No. 73,842, val. \$16,665.
Apple trees, 54,251, 117,714 bu.
Pear trees, 1472, 863 bushels.
Peach trees 3498, 746 bushels.
Cherry trees, 1106, 479 bu.
Plum trees, 973, 369 bushels.
Number of stock under one year old: horses, 231; cattle, 2231; sheep, 8763; hogs, 2746 goats 10.
Horses and mules, 3017, value \$239,078.
Cattle, 10,898, val. \$249,398.
Sheep, 27,216, val. \$105,520.
Hogs, 3963, value \$10,966.
Number of sheep killed by dogs from July 1, 1908 to July 1, 1909, 106, valued at \$552.25.

H. W. Burgess, Esq., of Hillsboro, Pocahontas county, visited his son, F. A. Burgess, at Ronceverte last week. He was in Lewisburg Monday morning on his way to visit his daughters, Mrs. Chas. Bolton and Mrs. Coe Bransford, in Williamsburg district, but, receiving a message that his son, Tom's, wife was critically ill, he returned to Hillsboro on the afternoon train. Mr. Burgess is a native of Lewisburg, is now about 77 years of age and during the War served as a soldier in Capt. Moorman's company of the 14th Virginia Cavalry.—Greenbrier Independent.

"There were no laced shoes or corsets in those days. When the women came home from church, or social gatherings, they did not have to slip into a private dressing room to lengthen the back strap, loosen up the lame string and unbuckle the belly band before they could breathe freely as God intended they should.—Old Settler in Nicholas Chronicle.—Things are different on this side of the Mountain. In Pocahontas it is the men who are driven to Church and social gatherings.

Mrs. M. D. Snayers, of Durbin underwent a severe operation at Hinton Hospital last week, for a complication of troubles. Her husband reports her doing nicely.

THE LAZY BUG.

The following from the Baltimore News was sent us by a close observer who fears that the Bug is beginning to make its appearance felt in this county. It will be noticed that this section is included in the location where it is prevalent:

Washington.—The hook worm, or "lazy bug," as it has been shown to exist in the southern States, and according to many who have given study to the subject, the two letters were simply run together so as to make the magic 8, the loop of the T disappearing in the operation.

2. An adaptation or modification of 8/8, once used to denote a piece of eight reals, or, as a dollar was then called, a piece of eight.

3. A form of H. S., which was used to mark the Roman unit of money.

4. A contraction of P. and S., used in Spanish accounts to indicate peso, (dollar).

5. A device formerly seen on the reverse of a Mexican Pillar dollar, (a Spanish coin), representing the Pillars of Hercules, connected by a scroll displaying the words Plus Ultra.

6. A contraction of the Spanish "fuertes," (hard), to distinguish the silver, or hard, dollar from paper money.

In all of these cases it must be admitted that there is no little speculation, and up to this time there is no prospect that the question will ever be definitely settled. The student of the subject can take his choice, and doubtless will be able to find some kind of authority for any one of these diverse explanations.

ORIGIN OF THE RESTAURANT.

May Be Said to Have First Appeared in England About the Time of Shakespeare.

In primitive times, the only places in London where the public could be entertained with food had been the cooks' shops. The famous East Cheap was a great thoroughfare, down which the stalls of the butchers alternated with those of the cooks. You chose a joint at the flesh market and you carried it next door to be cooked for you by a certain hour. If you wished for wine, you must bring that with you, for the cooks sold no liquor, although they seem to have provided, as time went on, more and more of the natural accompaniments of meat, such as bread, vegetables and pastry. This habit continued until well into the reign of Elizabeth, and so long as such an inconvenient custom prevailed there could have been no real comfort for any citizen who chose to dine abroad. He must have had as much trouble with portage and baskets as a country party has to-day at a picnic. But about the time that Shakespeare came up to London a remarkable change took place in the customs of the town, and the practice of public hospitality and entertainment was singularly facilitated. The nature of this change lay in the sudden development of the tavern and the consequent withdrawal of the cookshop. The worshipful company of Pastelars, as the cooks were called, ceased to enjoy the monopoly of providing hot meals.

World's Busiest Street.

The shortest and busiest street in the world is Mansion House street, London. It is only about 500 feet long, and runs between the mansion house, the official residence of the lord mayor, and the Union bank of London, and everything and everybody that passes between "the city" which is the ancient section of the metropolis, and the rest of London have to go that way. Not long ago policemen were stationed to count the vehicles, two on either side. They were relieved every hour, because counting is very tedious work and acts upon the nerves. One set of counters reported 37,552 vehicles, another set counted 37,516 and the other two relays reported totals between these two extremes.

Pineapples in Queensland.

Altogether there are some 3,000 acres devoted to pineapple cultivation in Queensland, giving a yield of something like ten million pine a year. Two crops are gathered during the 12 months: Most of the owners of the plantations started without capital, and are now reaping about \$250 an acre net profit. It is an industry from which returns are quickly obtained. Fifteen months after planting the grower is securing his first crop. Next year he should double his crop; because, like the banana, once the pineapple has borne fruit, the stalk dies down, and its place is taken by one or more suckers, which, in their turn, fruit and die. A cifer of remarkably fine quality can be made from the fruit.

Extremely Dry Weather.

Several Kansans were talking of dry weather in the state in the earlier days.

"I drove through a Western county a number of springs ago," said one of them, "and it hadn't rained for a long time."

"Pretty dry, isn't it?" ventured to a native.

"But your boots is dry," he replied. "See that old sow over there?"

"I told him I was looking at her."

"Well, he went on, 'I had to drive her down to the creek, three miles away, and soak her for three days before she would hold stop. She was mighty dry, I tell you.'"

DERIVATION OF DOLLAR MARK.

Has Long Been Subject of Discussion, and Many Are the Theories Advanced.

The origin of the sign \$, as representing the unit of our money system, has long been the subject of discussion and not a little doubt. It has been variously accounted for, the derivations generally advanced being:

1. A combination of the letters U. S. After the adoption of the federal constitution these initials were prefixed to the federal currency, and according to many who have given study to the subject, the two letters were simply run together so as to make the magic 8, the loop of the T disappearing in the operation.

2. An adaptation or modification of 8/8, once used to denote a piece of eight reals, or, as a dollar was then called, a piece of eight.

3. A form of H. S., which was used to mark the Roman unit of money.

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